UNDERREPRESENTED MINORITIES AND MEDICAL EDUCATION IN CALIFORNIA

RECENT TRENDS IN DECLINING ADMISSIONS

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A Report by the
Center for California Workforce Studies
at the
University of California San Francisco

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Janet Coffman, MPP

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Table of Contents

Chapters

Executive Summary.....1

A. Introduction.....3

B. Trends in Underrepresented Minority (URM) Medical Students in California.....4

1. Applications
2. Admissions
3. Matriculants

C. Graduates' Intentions to Practice in Underserved Areas.....14

D. Trends in Underrepresented Minorities in Residency Training Programs in California.....16

E. Conclusions and Recommendations.....20

Appendix.....25

Figures

1. Trend in URM Applicants to California Medical Schools, 1990-1998.....6
2. Trend in URM Admissions to California Medical Schools, 1990-1998.....8
3. Trend in URM Matriculants to California Medical Schools, 1990-1998.....9
4. URM Applications, Admissions and Matriculants to U.S. Medical Schools, 1990-1998.....10
5. URM Matriculants to California Medical Schools, by School, 1990-1998.....11
6. URM Matriculants as a percent of total Matriculants, According to Medical School, 1998.....12
7. California Resident URM Matriculants by Medical School Location, 1990-1998.....14
8. 1998 California Medical School Graduates Intent to Practice in Medically Underserved Areas.....15
9. Latino and Black First Year Residents in California (1995-1997) Compared with California's Population (1996).....18

EXECUTIVE SUMMARY

The decision of the Regents of the University of California to end selective admissions for racial/ethnic minorities in 1995 and the passage of Proposition 209 in 1996 have generated great concern about the enrollment of racial and ethnic minorities in UC medical schools. This report analyses trends in medical education for underrepresented minorities (URMs) in California between 1990 and 1998. This comprehensive study is the first published report to:

1. Evaluate URM trends for both University of California (UC) and private California medical schools,
2. Analyze trends in URM applicants and admissions in addition to matriculants, and
3. Include data on URM participation in residency training in California.

Our analyses document dramatic reductions in the number of URMs who are applying to, gaining admission to, and matriculating in medical schools in California. These reductions in California are greater than the recent decline in URM participation in medical education for the nation as a whole. Moreover, our data suggest that URMs who are residents of California are preferentially enrolling in US medical schools outside of California. This trend coincided with the decision of the UC Regents to abolish selective admissions of URMs in UC policy and the passage of Proposition 209. Together, our data suggest that California has become a less hospitable environment for URMs seeking entrance to medical school.

Key findings of our study include:

- Compared with the peak years of URM participation in the mid 1990s, by 1998 there has been a 25 percent reduction in URM applicants, a 30 percent reduction in URM admissions, and a 32 percent reduction in URM matriculants to UC and private California medical schools.
- These reductions have been of similar magnitude at UC and private California medical schools, although the reductions at UC schools tended to begin one or two years earlier than those at private schools, suggesting that any impact of public policy changes may have affected UC schools prior to private schools. Admissions and matriculants began to drop prior to public policy changes.

- URM admissions to California medical schools have dropped more than URM applications, and this is reflected in the decline in the proportion of applicants who were admitted. The percentage of URM applicants admitted to any UC medical school has fallen from a peak of 20 percent in 1990 to 14 percent in 1998, while the percentage of URM applicants admitted to any private California medical school has declined from 18 percent in 1990 to 11 percent in 1998.
- In 1998 URMs constituted 14 percent of matriculants in UC medical schools and 11 percent in private California schools, down from a peak of 21 percent and 15 percent, respectively, in the 1992-1993 period.
- Major drops in URM matriculants at 3 schools (University of California, Irvine (UCI), the University of California, San Diego (UCSD) and the University of Southern California (USC)) account for most of the overall reduction in URM matriculants in California schools. UCSD and USC have improved in 1998 over 1997, but still account for much of the drop.
- Since 1994 there has been an increase in the proportion of California resident URMs who are leaving California to enter medical schools in other states. This trend suggests that a growing number of URM Californians are finding out of state medical schools more hospitable for their medical education. This may be due to different admission and recruitment policies, financial aid considerations, and other related factors.
- Fewer URM Californians are applying to any US medical school. The number of URM applicants who were California residents fell by 24 percent between 1996 and 1998, compared to an only 11 percent drop in non-California resident URM applicants in the same period.
- A decline in URM enrollment in residency training positions in California has not yet occurred. However, the observed drop in URM entrance to medical schools likely presages a decline in URMs in residency training that will occur in the next two to four years as fewer URMs graduate from medical school. Residency enrollment patterns could change significantly over the next two to four years, particularly if the enrollment of URM medical students continue to decline nationwide.

INTRODUCTION

The decision of the Regents of the University of California (UC) to end selective admissions for racial/ethnic minorities in 1995 and the passage of Proposition 209 in 1996 have generated great concern about the enrollment of racial and ethnic minorities in UC medical schools. Concern has focused on African-Americans, Latinos, and Native Americans because these racial/ethnic groups are underrepresented among physicians. In particular, there is concern that the number of URM enrollees will decline and that this will, in turn, widen the already large disparity between the racial/ethnic composition of the state's physician workforce and that of its population. This disparity in the racial and ethnic diversity of California's medical students may affect the likelihood of future physicians practicing in underserved areas of the state.

The following analyses show that these concerns are warranted. The objective of this report is to determine whether trends in application, admission and matriculation of URMs have changed in California in the years following the repeal of selective admissions policies in the University of California and the passage of Proposition 209 in the state of California. There has been a significant decline in URM applicants, admissions, and matriculants to California medical schools since the recent changes in policy. This report presents original analyses of new data on underrepresented minorities (URM) in California's medical education system.[1] New data were obtained from the Association of American Medical Colleges (AAMC) and American Medical Association (AMA) on medical schools and residency programs, respectively. The report begins with a look at trends in URM applicants, admissions and matriculants in California medical

[1] The AAMC defines "underrepresented minorities" to include the following racial/ethnic groups: African-Americans, Mainland Puerto Ricans, Mexican-Americans, and Native Americans. Other racial/ethnic groups composed primarily of recent immigrants, such as Central Americans and Southeast Asians, may also be

schools. This is followed by an analysis of graduates' intentions to practice in underserved areas. Trends in the second stage of medical education, residency training, are then examined. Finally we offer some conclusions and recommendations based on our findings

UNDERREPRESENTED MINORITIES IN CALIFORNIA MEDICAL SCHOOLS

California's medical schools and residency programs are major sources of physicians for the state. The number, type and diversity of physicians has a direct impact on the distribution and quality of medical service available in the state. Thus, it is important for California policymakers to closely monitor trends in medical education to ascertain what the state is getting in return for its investment in medical education.

During the 1997-98 academic year, approximately 4,400 students were enrolled in California's nine medical schools.[2] Enrollment in California medical schools has remained stable at this level over the past 15 years. Fifty-two percent of California medical students were educated in the six UC medical schools (UC-Davis, UC-Irvine, UC-Los Angeles, UC-San Diego, and UC-San Francisco and Drew).[3] The remainder were educated in the state's three private schools (Loma Linda University, Stanford University, and the University of Southern California).[4]

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underrepresented in medicine but data about these groups are not available.

[2] Appendix IA: Medical Schools in the United States. *Journal of the American Medical Association.* 1997:278(9);770.

[3] Drew Medical School is affiliated with UCLA, and its primary mission is to prepare physicians for practice in underserved areas. Numbers for Drew Medical School are separated from the UCLA Medical School for the purposes of this report.

[4] There are also two osteopathic medical schools in California. The first is Western University of Health Sciences, and a second osteopathic medical school opened in San Francisco in 1997-1998. The data we received from the AAMC only include allopathic medical programs. Therefore our analysis of medical school trends will not include osteopathic student numbers. Many osteopathic graduates do go on to allopathic residency positions, so some

Approximately 80 percent of the students lived in California at the time they entered medical school.[5]

The following analyses compared 1998 data on URM applicants, admissions, and matriculants with data from peak years earlier in the 1990s for each institution. The peak year varies across category and institution, so not all comparisons are for the same years.

Applicants

This analysis counts a person as an applicant if the individual applied to at least one California medical school in a particular year. Any one applicant may submit multiple applications to different California medical schools. However, each individual applicant is only counted once for this analysis.

The number of URM applicants to California medical schools started to decline in 1996 after a peak of 1,641 URM applicants in 1995, coincident with the UC Regents decision in 1995 to repeal selective admissions policies. By 1998, the number of URM applicants had dropped 25 percent from the peak in 1995. This represents a net decline of 418 URM applicants. Mexican Americans accounted for most of the decline in URM applicants. The reduction in URM applicants was similar for UC and private schools. Between 1995 and 1998, URM applicants dropped 25 percent for private California schools and 29 percent for UC schools. (Figure 1)

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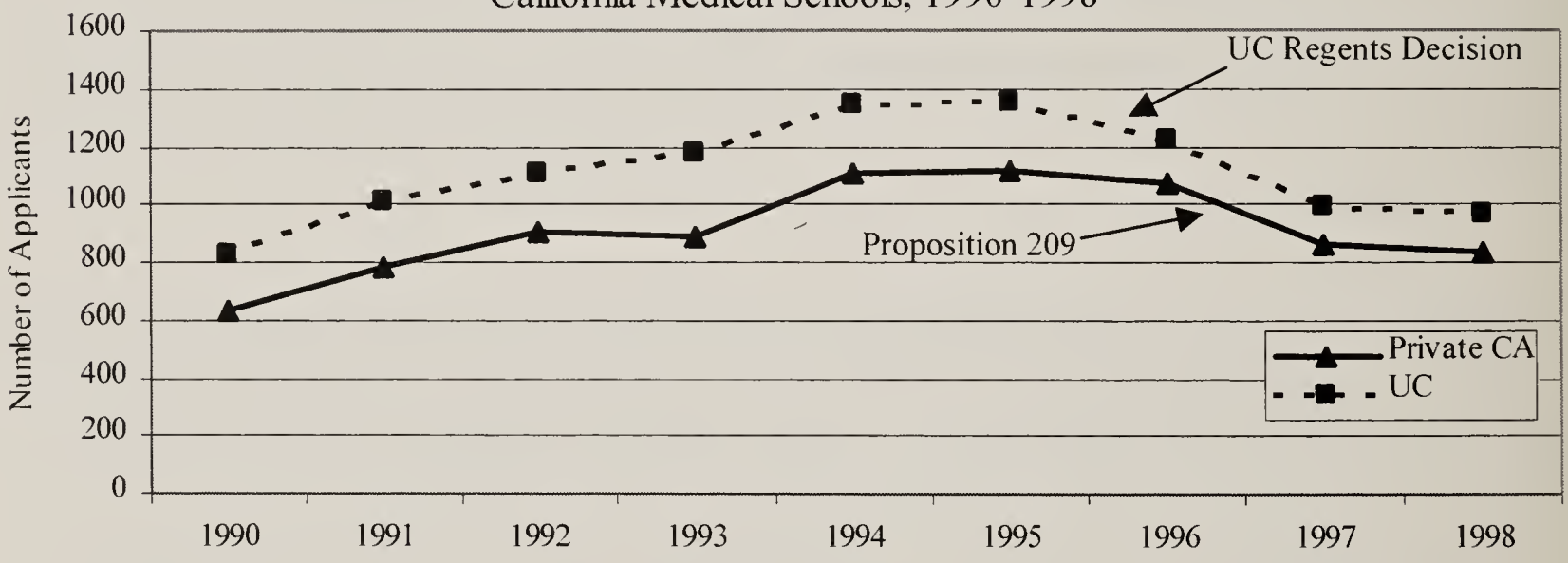
osteopathic students are included in the residency numbers.

[5] Coffman J, Young J, Vranizan K, Blick N, Grumbach K. *California Needs Better Medicine*. San Francisco, CA: UCSF Center for the Health Professions, 1997.

At the national level, all US medical schools saw a drop in URM applicants between 1996 (the peak year for overall URM applicants to US schools) and 1998. However, the drop in California was much greater: the number of URM applicants to California schools fell by 25 percent, whereas the reduction nationwide was only 13 percent. The national reduction reflects to a great extent the drop in California, where Proposition 209 and the UC regents decision repealed selective admissions, and drops in Texas, Louisiana and Mississippi, the three states bound by the Hopwood decision of 1996.[6]

Figure 1

Trend in Underrepresented Minority (URM) Applicants to California Medical Schools, 1990-1998



Source: AAMC

A closer look at the decline in URM applicants by individual school shows that the drop in applicants was relatively consistent across the six public and three private medical schools.

[6] In this opinion, the Fifth Circuit Court of Appeals overturned a ruling that allowed the University of Texas School of Law to consider race when evaluating applicants. The Fifth Circuit determined that the school did not offer sufficient evidence that the Fourteenth Amendment allowed them to consider race in favor of Hispanics and African-Americans to the detriment of white applicants.

Admissions

Admission to medical school is very competitive. Medical schools typically use a two-stage admissions process. Written applications are reviewed to select candidates for on-campus interviews. Once interviews are completed, applications are reviewed a second time along with interviewers' evaluations. Schools use a variety of criteria for awarding admission, including measures of cognitive ability, such as grades and test scores, as well as personal characteristics, such as interpersonal skills, life experience, maturity, and socio-economic disadvantage. In 1994 each of UC's five medical schools received an average of 5,299 applications. At each school, an average of only 11 percent of applicants (600 persons) were interviewed and only 4 percent accepted for admission.[7]

The decline in URM admissions in California medical schools actually began in 1995, a year before the number of URM applicants began to fall. The annual number of URM admissions to all California medical schools dropped 30 percent between its peak in 1993-1994[8] and 1998. This represents a net decline of 78 URM admissions. URM admissions to UC schools declined 32 percent between 1998 and their peak in 1993, and URM admissions to private California schools declined 42 percent since their peak in 1994. (Figure 2) URM admissions to UC schools declined prior to reductions in URM admissions to private California schools.

URM admissions to California medical schools have dropped more than URM applications, and this is reflected in the decline in the proportion of applicants who were admitted.

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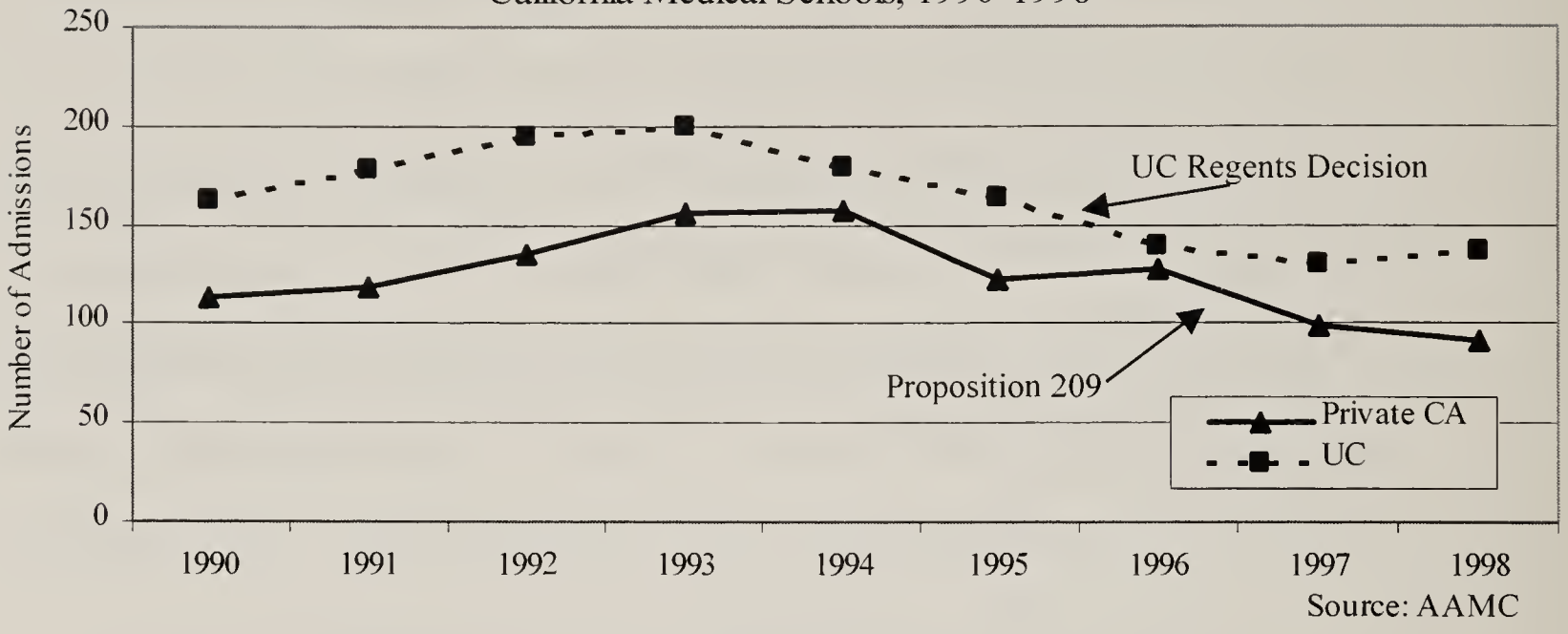
[7] The Regents of the University of California. Report on UC Medical School Admissions, as summarized in the minutes of the meeting of the Committee on Educational Policy, Subcommittee on Affirmative Action, November 17, 1994.

[8] The number of URM Admissions to California medical schools was the same (262) in 1993 and 1994.

Figure 2

Trend in Underepresented Minority (URM) Admissions to California Medical Schools, 1990-1998



Source: AAMC

The percentage of URM applicants admitted to any UC medical school has fallen from a peak of 20 percent in 1990 to 14 percent in 1998, while the percentage of URM applicants admitted to any private California medical school has declined from 18 percent in 1990 to 11 percent in 1998.

The drop in URM admissions in California beginning in 1994 was followed two years later by a drop in URM admissions in all US medical schools. Nationwide, the peak for URM admissions was in 1995. Between 1995 and 1997, URM admissions to US medical schools overall dropped 8 percent. Again, 49 percent of the national drop can be explained by the drops in California, Texas, Louisiana and Mississippi.

A closer look by individual school shows that, unlike the drop in applicants, the drop in admissions was not evenly distributed among schools. While URM admissions to all UC schools have dropped somewhat, UC Irvine and UC San Diego have had consistent and sharp

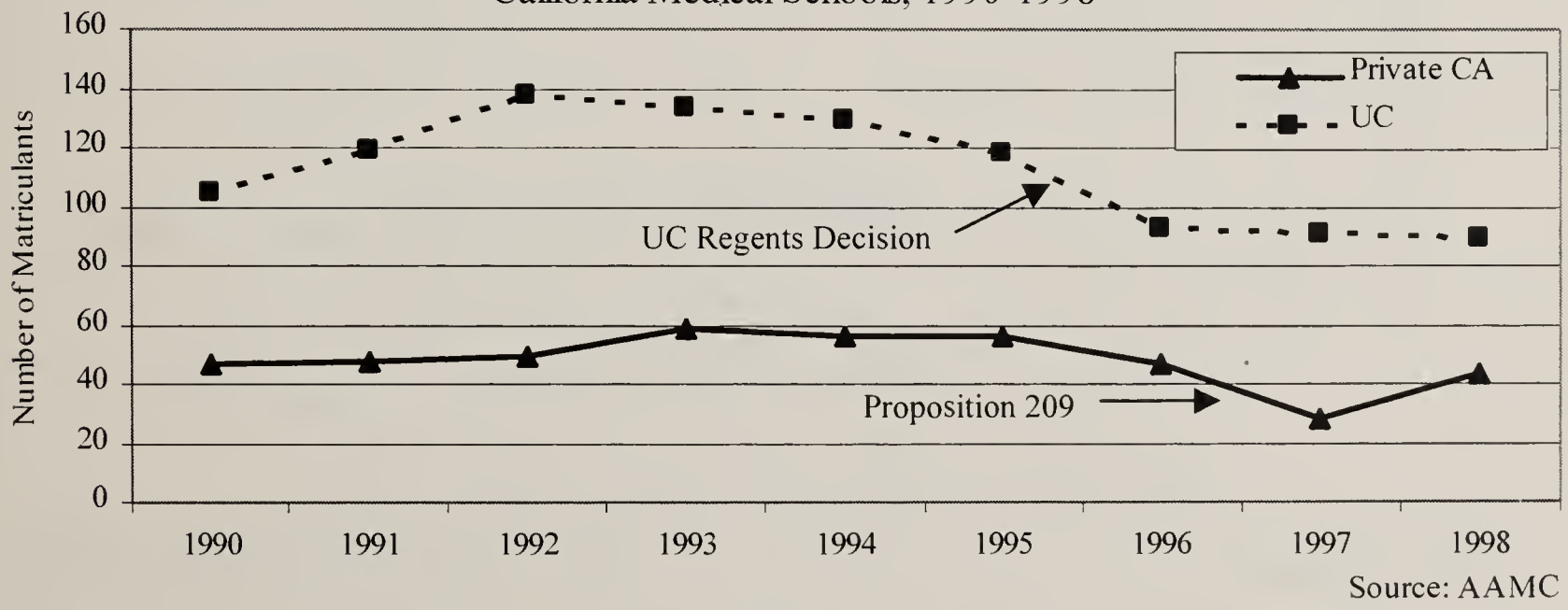
drops in URM admissions (81 percent and 59 percent respectively from 1994-1998). UC Davis also had a steep drop in URM admissions (74 percent) between 1993 and 1995, a trend that was reversed in 1996. Among private schools, USC has had the most significant drop; 58 percent fewer URMs were admitted in 1998 as compared to 1993.

Matriculants

Students that receive admission notices to medical school must then decide where to attend. A student is counted as a matriculant only for the school in which they enroll. The number of URM matriculants in California medical schools in 1998 declined 32 percent from a peak of 193 in 1993. This represents a net decline of 61 URM matriculants. URM matriculants to UC schools declined 36 percent since their peak in 1992. (Figure 3) While URM matriculants at UC schools have steadily declined since 1992, private California medical schools experienced a sharp decline in the 1996-1997 period, followed by a partial rebound in 1998 (mostly attributable to increases at Stanford). Nonetheless, in 1998 private California medical schools were still 27 percent below their peak in 1993 for URM matriculants.

Figure 3

Trend in Underrepresented Minority (URM) Matriculants to California Medical Schools, 1990-1998



Source: AAMC

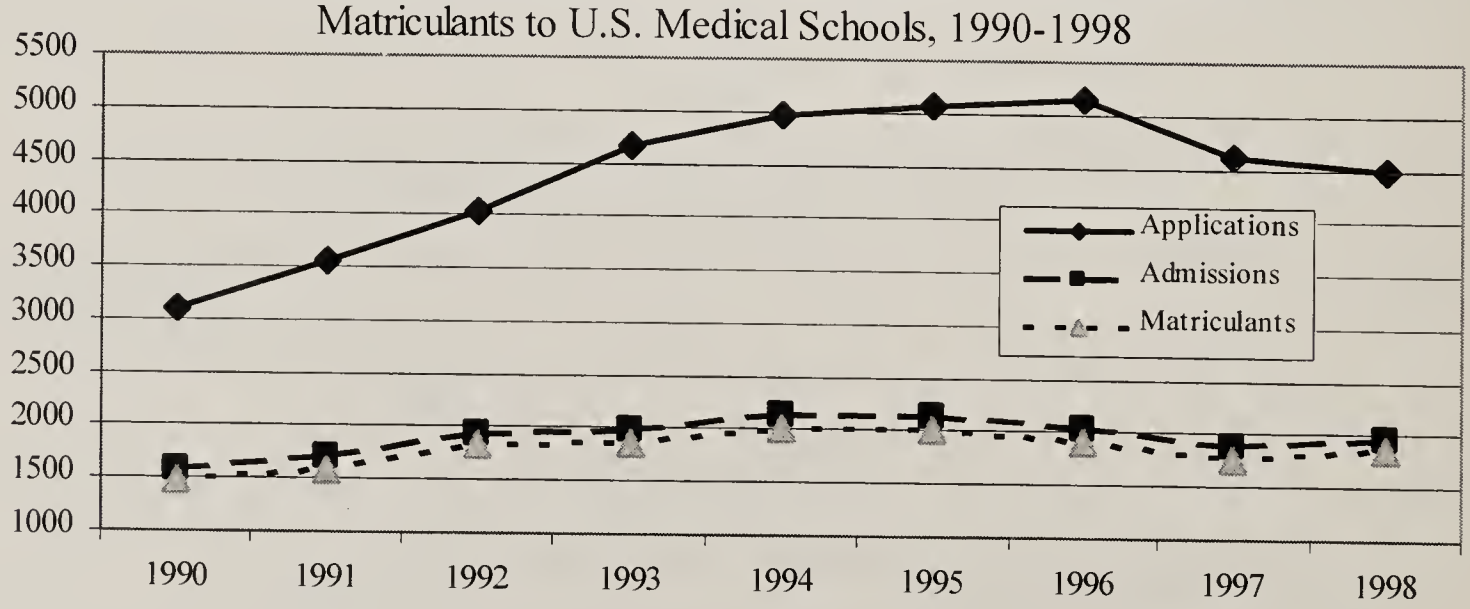
In the fall of 1998, URMs constituted 14 percent of all matriculants at UC medical schools, a sharp drop from a height of 21 percent in 1992. URMs constituted 11 percent of all matriculants at private California schools, also a drop from a height of 15 percent in 1993.

The percent of URM students admitted who matriculated to UC schools has remained relatively stable between 1990 and 1998, ranging from 65 percent in 1990, peaking at 72 percent in 1994 and 1995, and dropping back to 65 percent in 1998. Private California schools' matriculation rates for URM admissions have not stayed as constant, starting at 41 percent in 1990, dropping in 1997 to only 28 percent, and then rising again in 1998 to 47 percent.

As was the case for applicant and admission patterns, the overall US trends in URM matriculants followed the private California school trends with reductions beginning in 1996, a few years later than the onset of the decline for UC schools. (Figure 4)

Figure 4

Underrepresented Minority (URM) Applications, Admissions and Matriculants to U.S. Medical Schools, 1990-1998

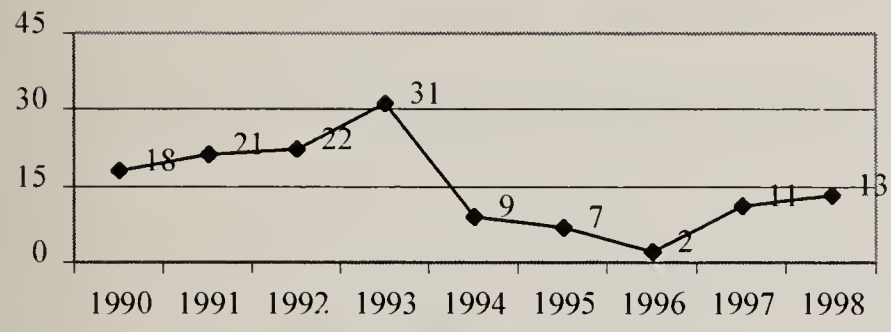


Source: AAMC

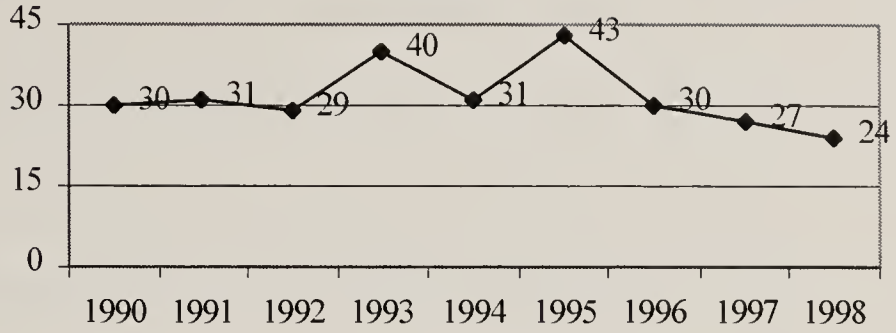
Figure 5

Number of URM Matriculants to California Medical Schools

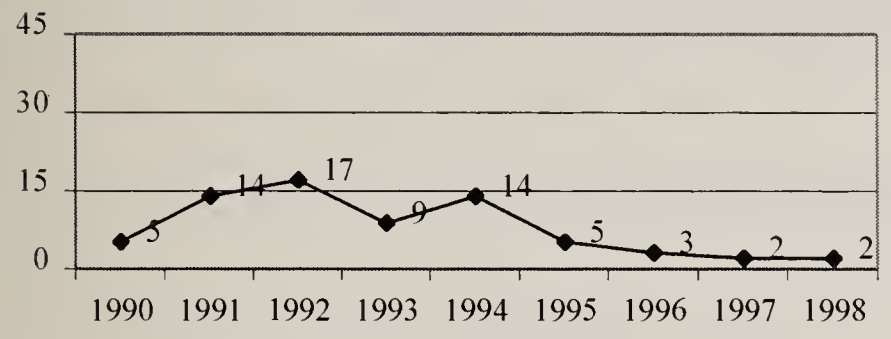
UCD



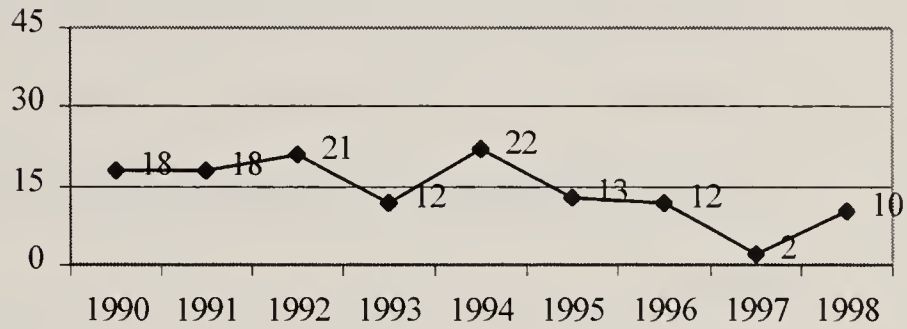
UCSF*



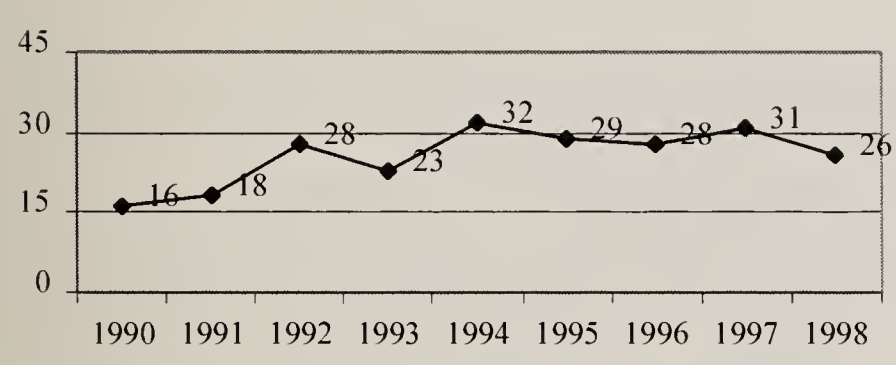
UCI



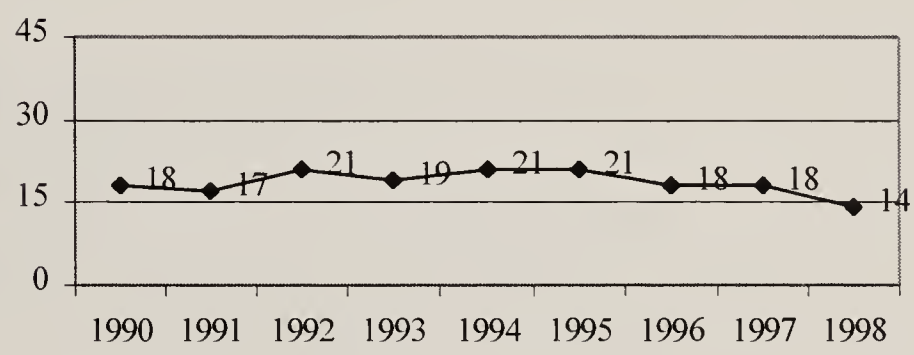
UCSD



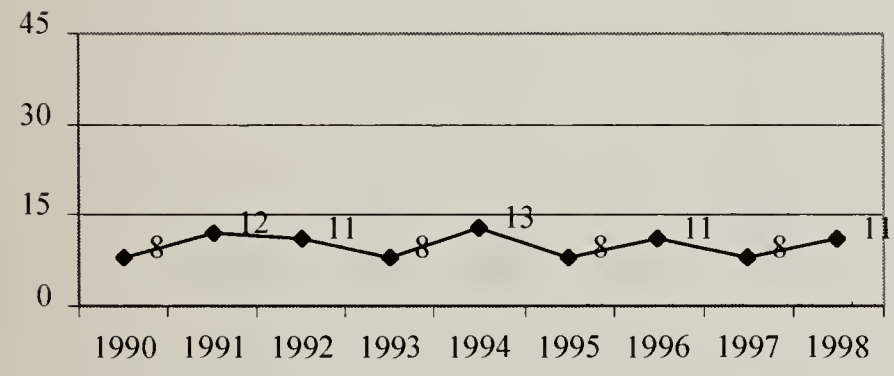
UCLA**



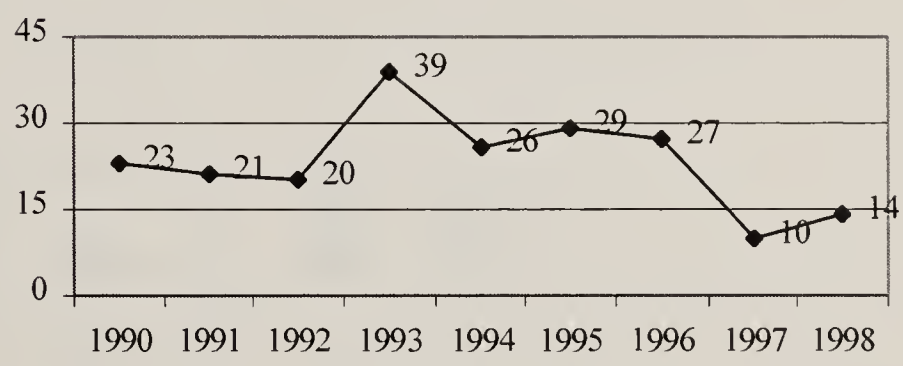
Drew



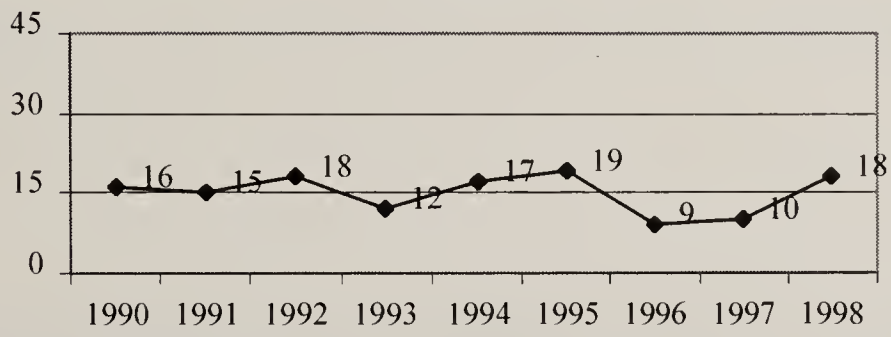
Loma Linda



USC



Stanford



* Includes UCSF Berkeley Combined Program

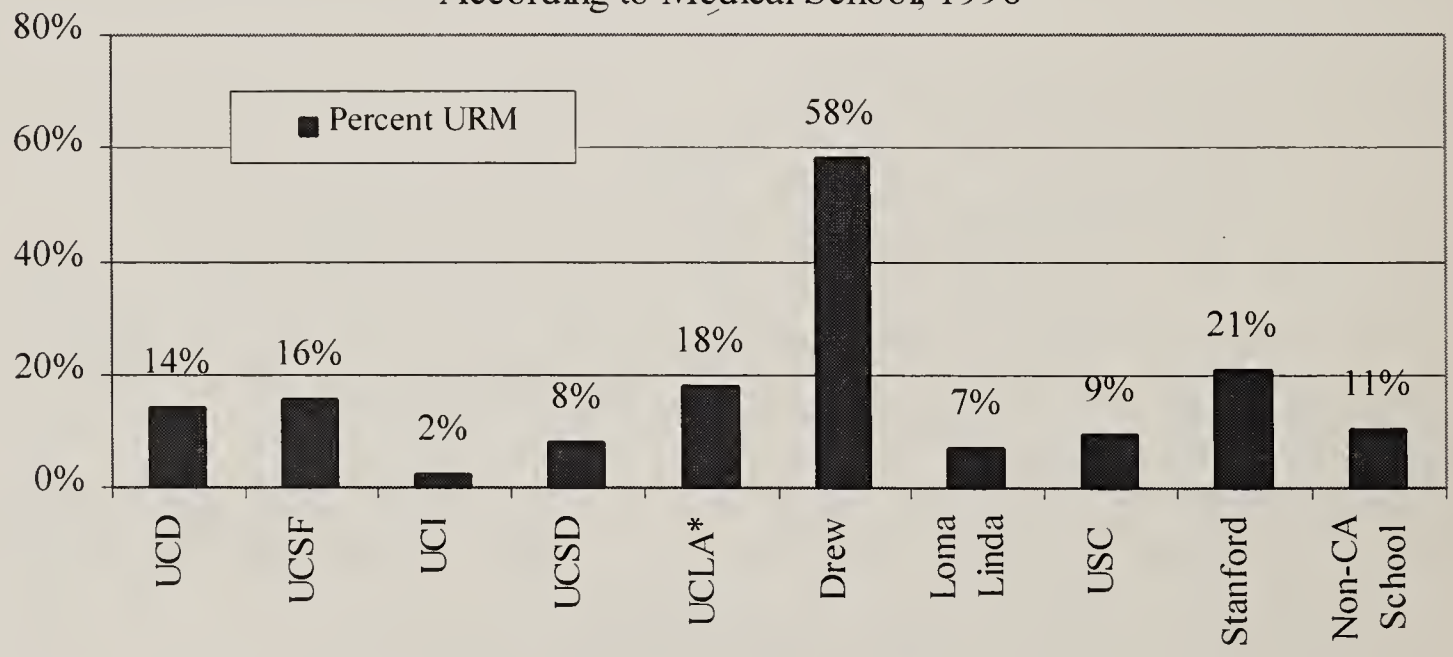
**Does not Include Drew Numbers

Source: AAMC

As with admissions, a closer look by individual school shows that the drop in matriculants was not evenly distributed among schools. (Figure 5) UC Irvine dropped to only 2 URM matriculants in 1998, an 86 percent drop. UCSD dropped to 2 in 1997 and is up to 10 in 1998. However the 1998 level is still a 55 percent drop for UCSD since 1994. UC Davis also dropped to only 2 URM matriculants in 1996, but increased to 13 in 1998. USC's 64 percent drop in matriculants, from a peak of 39 in 1993 to 14 in 1998, has been the most significant among private schools. Stanford dropped to 9 URM matriculants in 1997 from its peak of 19 in 1995, but has rebounded significantly to 18 URM matriculants this year.[9] As figure 6 below shows, in 1998, the number of URMs matriculants as a percent of total matriculants varied widely by school, with a high of 58 percent at Drew and a low of 2 percent at UCI.

Figure 6

URM Matriculants as a Percent of Total Matriculants
According to Medical School, 1998



*Does not include Drew numbers

Source: AAMC

[9] In this same time period (1993-1997) Western Health Sciences University College of Osteopathic Medicine has had a 79 percent increase in the number of URM matriculants to their program. This is an increase from 12 percent to 19 percent of their entering class. No other data was available on this program. Source: WHSU-COMP, 1998

Trends in California URM Residents v. Non-residents

Trends in the numbers of applicants, admissions, and matriculants were compared among URMs who were California residents and URMs who were residents of other states at the time of application to a California medical school.

Fewer URM Californians are applying to any US medical school. The number of URM applicants nationwide who were California residents fell by 24 percent between 1996 and 1998, from 676 to 512 applicants. This drop was almost twice as great as the 11 percent drop among non-California resident URM applicants. Californians accounted for 25 percent of the drop in URM applicants nationwide.

The decline in the number of URM Californians applying to medical school is not due to a decline in the pool of potential URM applicants. To the contrary, that pool has grown significantly during the 1990s. The number of bachelor's degrees awarded to URMs by UC and California State University (CSU) campuses has risen dramatically during the same period in which applications to medical schools have fallen. The number of bachelor's degrees awarded to URMs by UC and CSU increased by approximately 40 percent between 1991 and 1997, from 11,000 to 16,000. A similar pattern is evident in the awarding of bachelor's degrees specifically in the biological and life sciences, which are fields in which prospective medical students typically major. The number of URMs receiving bachelor's degrees in these fields rose from 483 to 704 students during this period.[10]

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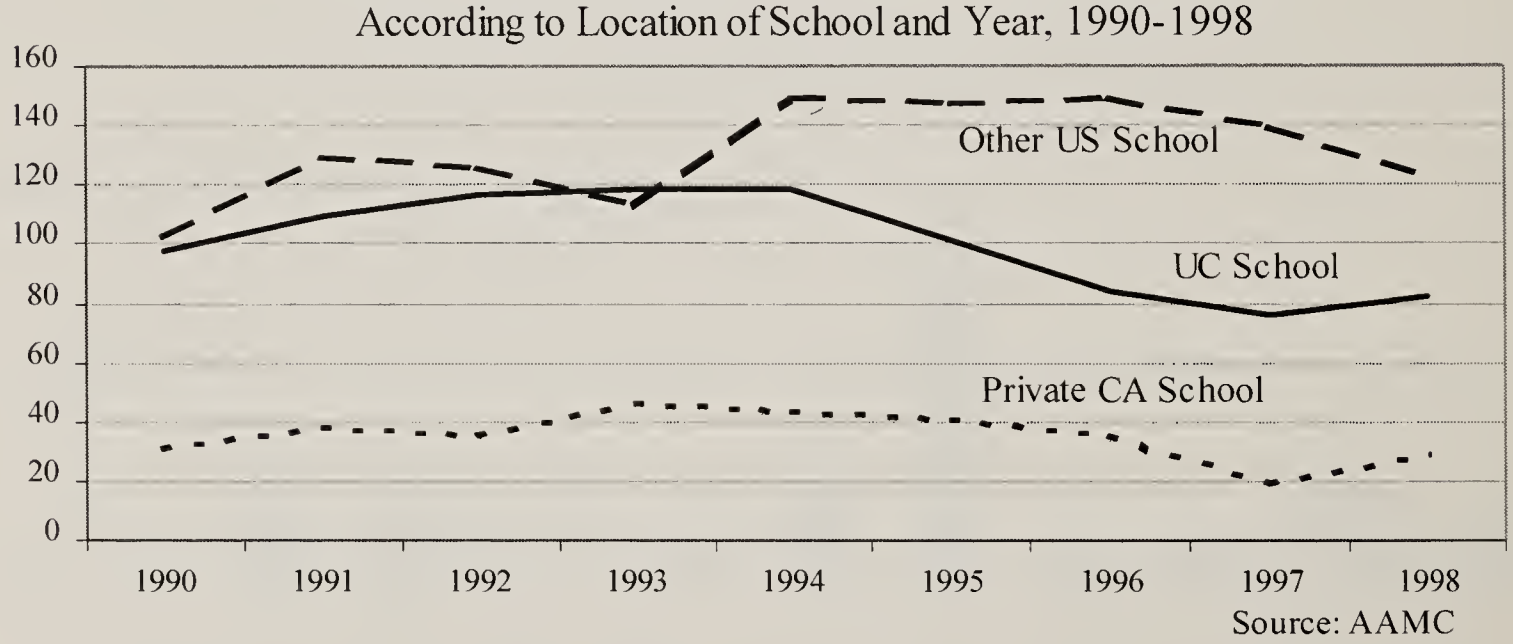
[10] All data cited in this paragraph are from tabulations supplied by the California Postsecondary Education Commission.

One key trend was found in examining where California resident URMs are matriculating. In Figure 7, the top, broken line represents the trend in California resident URMs who applied to a California medical school but matriculated to a medical school outside of California. Since 1994, the number of URM Californians entering medical schools in other states has increased while the number of URM Californians entering California schools has declined. In 1993, 41 percent of California resident URMs entering US medical school matriculated outside of California. In 1998, this number increased to 52 percent. This trend suggests that a larger proportion of URM Californians are deciding that schools in other states may be a more hospitable environment for their medical education. This may be due to different admission and recruitment policies, financial aid considerations, and other related factors.

Figure 7

Number of California Residents Matriculating in Medical School, According to Location of School and Year, 1990-1998



Source: AAMC

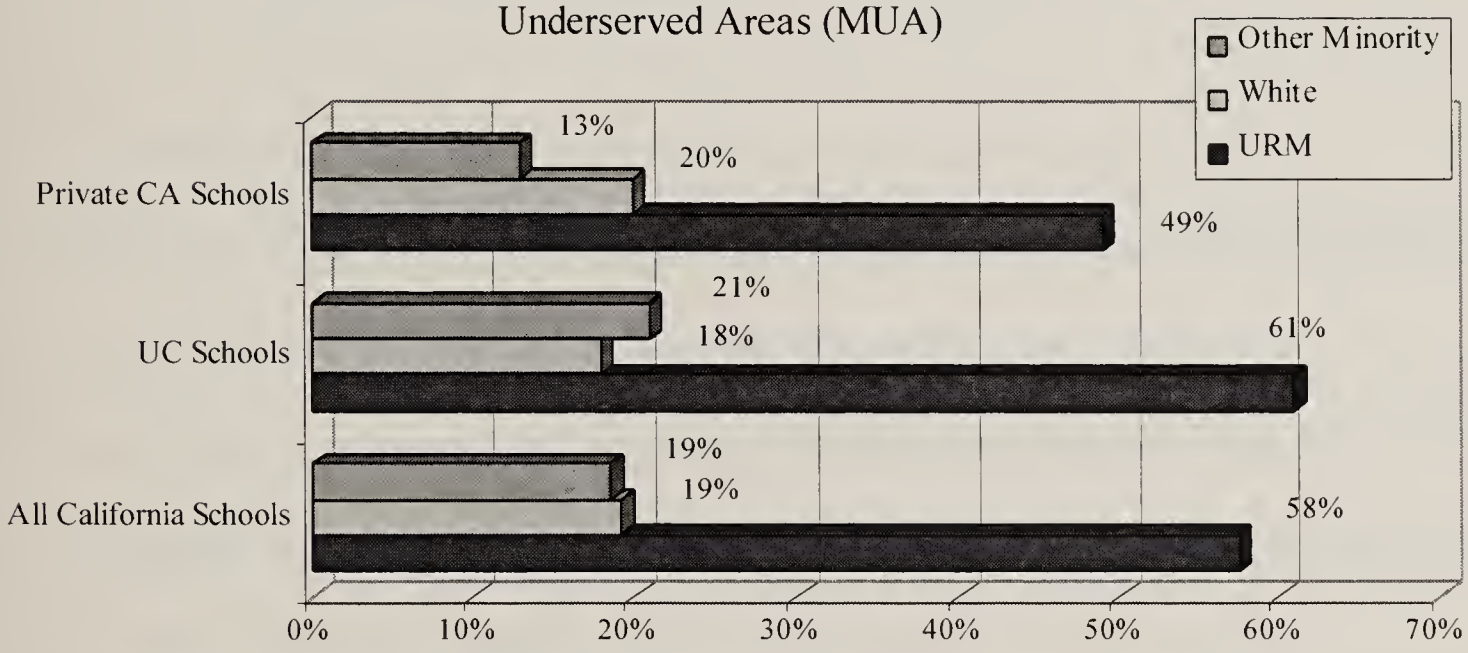
GRADUATES' INTENTIONS TO PRACTICE IN UNDERSERVED AREAS

Inadequate local physician supply is a major barrier to access to care in many communities across the state. Studies indicate that California has an ample supply of physicians, but they are

poorly distributed geographically and are much less racially/ethnically diverse than the state's population.[11,12] Communities with high proportions of African-Americans and Latinos have the lowest supplies of physicians.[13] It is important to have a diverse physician workforce, especially in a state as diverse as California. Multiple studies indicate that African American and Latino physicians are more likely to practice in medically underserved communities. These minority physicians also care for greater numbers of racial/ethnic minority patients.[14.15.16.17.18]

Figure 8

1998 California Medical School Graduates Intent to Practice in Medically Underserved Areas (MUA)



[11] Grumbach K, Coffman J, Young J, Vranizan K, Blick N. Physician supply and medical education in California: a comparison with national trends. *Western Journal of Medicine*. 1998;168:412-421.
[12] Komaromy M, et al. The Role of Black and Hispanic Physicians in Providing Health Care for Underserved Populations. *New England Journal of Medicine*. 1996:334;1305-1310.
[13] Grumbach, et al, 1995.
[14] Cantor, Joel et al. Physician Service to the Underserved: Implications for Affirmative Action in Medical Education. *Inquiry*. Vol. 33, Summer 1996, 167-80.
[15] Keith, Stephen, et al.. Effects of Affirmative Action in Medical Schools. *New England Journal of Medicine*. Vol. 313 No. 24, December 12, 1985, 1519-1525.
[16] Komaromy, 1996.
[17] Moy, Ernest et al. Physician Race & Care of Minority & Medically Indigent Patients. *Journal of American Medical Association*. Vol. 273 No. 19, May 17, 1995, 1515-20.
[18] Xu, Gang, et al. The Relationship between the Race/Ethnicity of Generalist Physicians and Their Care for Underserved Populations. *American Journal of Public Health*. Vol. 87, No. 5, May 1997,817-822.

The AAMC surveys medical school graduates on their intentions to practice in underserved areas. In 1998, 58 percent of URM graduates from California schools intended to practice in an underserved area, compared to 19 percent of non-Latino white graduates and 19 percent of other minority graduates.[19] URM graduates of UC schools are more likely to want to practice in an underserved area (61 percent) than URM graduates of a private medical schools (49 percent). Therefore, any drop in enrollment of URM students in California medical schools, particularly UC medical schools, may reduce the number of future physicians willing to serve in underserved areas.

UNDERREPRESENTED MINORITIES IN CALIFORNIA RESIDENCY PROGRAMS

Upon completion of medical school, a physician enters a residency program in a particular specialty, such as family practice or radiology. The length of residency training ranges from three to six years depending on the specialty and the requirements of individual residency programs. After completing their initial residency, approximately 30 percent of physicians then go on to complete two to three years of subspecialty training.[20]

In contrast to the public scrutiny of trends in URM enrollment in California medical schools, relatively little attention has been devoted to trends in enrollment in residency programs in the state. Trends in enrollment in residency training programs are important for three reasons. First, data on residents provide a better sense of the immediate impact of policy changes because

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[19] Other minority graduates include any minority groups (Asians for example) that are not considered underrepresented in Medicine.

[20] Miller RS, Dunn MR, Richter TH, Whitcomb ME. Employment-Seeking Experiences of Resident Physicians

residents are closer to completion of training and entry into practice. Second, residents are generally more likely than medical students to practice in the states in which they are trained. Finally, the annual number of graduates from California residency programs (approximately 2,500) is double the number of California medical school graduates (1,200). In 1997, California's 657 residency programs enrolled 8,662 residents.[21] The number of residents grew by 42 percent between 1980 and 1995.[22] Approximately 40 percent are enrolled in primary care programs[23] and 60 percent are in specialty programs. Roughly half are enrolled in UC-affiliated programs.

Figure 9 displays the percent of African-American and Latino[24] post-graduate year one residents (residents in their first year in a residency program[25]) and that of California's population[26]. These data show that in contrast to medical students, the percentage of URM residents has not fallen and, in fact, appears to have risen slightly[27]. The percentage of African-Americans rose from 3 percent in 1995 to 4 percent in 1997 and the percentage of Latinos rose from 5 percent to 7 percent.[28] (Data from prior years were not available to the authors.)

Completing Training During 1996. *Journal of the American Medical Association*. 1998: 280(9); 777-783.

[21] *Journal of the American Medical Association*, 1997: 278(9); 777.

[22] American Medical Association, Medical Education Database, 1995.

[23] Defined as family practice, general internal medicine, and general pediatrics programs. The actual numbers of graduates practicing as primary care physicians is lower than these percentages suggest, because many general internal medicine and general pediatrics residents go on to complete subspecialty training and practice as specialists.

[24] This analysis from the AMA database includes all Latino medical residents, not just Mexican American medical residents which are considered URMs. However, in California the vast majority of Latino's are Mexican American.

[25] Analysis restricted to PGY-1 residents with no prior US residency training in another program.

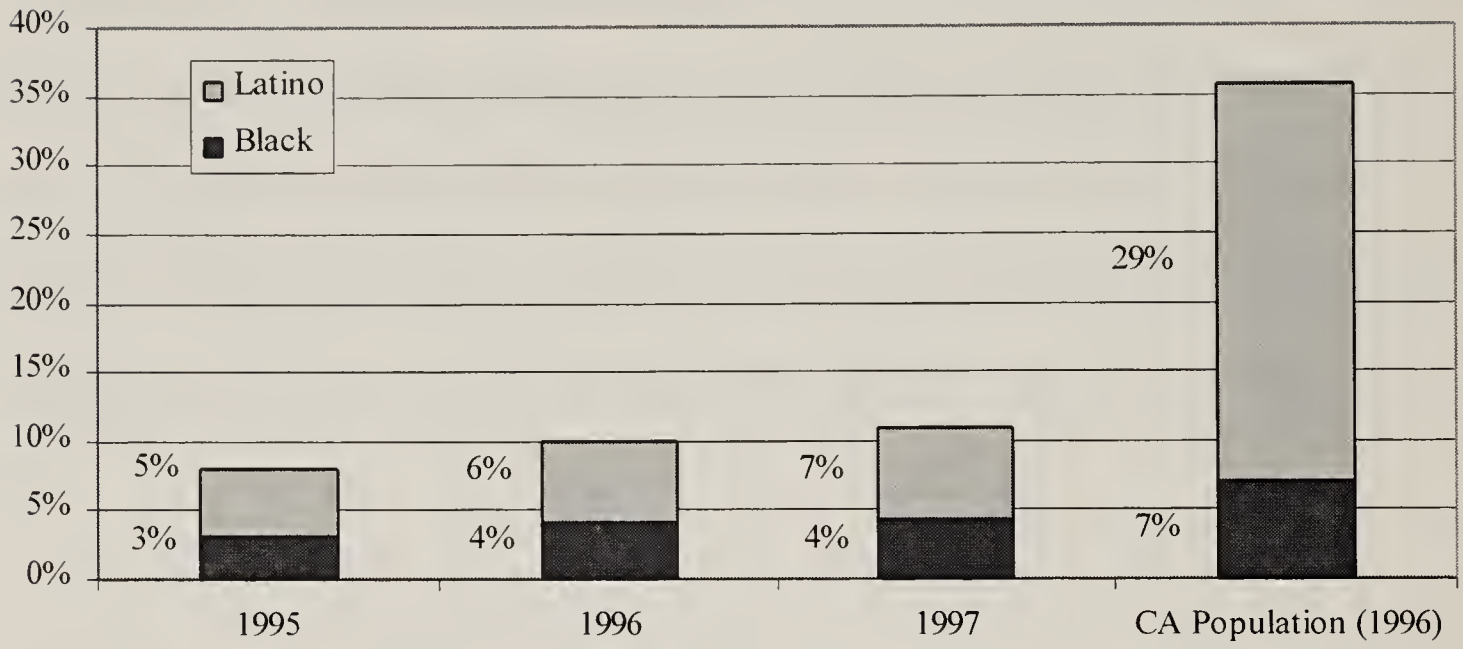
[26] The AMA does racial/ethnic breakdowns slightly different than the AAMC, therefore we are only showing Black and Latino residents as opposed to a complete URM grouping. American Indians are also underrepresented in California residency programs.

[27] The rise in minority residents may be a result of better reporting of race/ethnicity to the AMA and not an actual increase in minority students.

[28] AMA Medical Education Database, 1995-96, 1996-97, and 1997-98 editions.

Figure 9

Latino and Black First Year Residents in California
(1995-1997) Compared with California's Population



Source: AMA, CA Department of Finance

These trends were similar for programs affiliated and not affiliated with UC. Nevertheless, as the figure illustrates, African Americans and Latinos remain underrepresented among residents relative to their composition of the overall state population.

Three major factors may explain the differences in the enrollment patterns of URMs among residents compared to medical students. The first reason concerns timing. Persons entering residency programs in 1998 were admitted to medical school in 1994, a full year prior to the UC Regents' decision and two years prior to the passage of Proposition 209. The first class of UC medical students admitted after the revocation of selective admissions and the steeper decline in the number of URM matriculants will not affect residency programs until the year 2000. Any effect of the revocation of selective admissions at the undergraduate college baccalaureate level on residency enrollment will not be evident until at least the Year 2004.

In addition, California residency programs admit many applicants from medical schools in other states and nations, enabling them to draw on a larger pool of applicants than CA graduates. Although the number of URM matriculants began falling at UC in 1992-93, the number of URM matriculants nationwide did not begin to fall until 1996-97. Thus, residency enrollment patterns could change significantly over the next two to four years, particularly if the enrollment of URM medical students continue to decline nationwide.

A third factor concerns major differences in medical school and residency program admissions processes. Medical schools typically have far more applicants than they can accommodate and use a single admissions committee to make admissions decisions. To reduce the pool of applicants to a feasible size for on-campus interviews, admissions committees often rely heavily on quantitative criteria such as grades and test scores. In contrast, each residency program makes its own admissions decisions. Because residency program applicant pools tend to be much smaller, admissions committees are able to interview a larger percentage of applicants and to rely more heavily on qualitative criteria. In addition, some residency programs have a specific mission to prepare physicians for practice in underserved areas. To fulfill their missions these residency programs often develop admissions criteria that place more emphasis on applicants' commitment to underserved populations, cultural competence, and knowledge of languages other than English, relative to grades and test scores.

CONCLUSIONS AND RECOMMENDATIONS

This study documents dramatic reductions in the number of URMs who are applying to, gaining admission to, and matriculating in medical schools in California. These reductions in California are much greater than the recent decline in URM participation in medical education for the nation as a whole. Moreover, the data indicate that URMs who are residents of California are preferentially enrolling in US medical schools outside of California, suggesting that California has become a less hospitable environment for URMs seeking entrance to medical school.

Although the reductions at UC medical schools tended to begin one to two years earlier than those at private California medical schools, both UC and private schools have experienced large drops in URM enrollment. In 1998 URMs constituted 14 percent of first year medical students in UC medical schools and 11 percent in private California schools, down from a peak of 21 percent and 15 percent, respectively, in the 1992-1993 period. Major drops in URM matriculants at 3 schools (University of California, Irvine (UCI), the University of California, San Diego (USCD) and the University of Southern California (USC)) account for much of the overall reduction in URM matriculants in California schools.

A decline in URM enrollment in residency training positions in California had not yet occurred by 1997. However, the observed drop in URM entrance to medical schools likely presages a decline in URMs in residency training that will occur in the next two to four years as fewer URMs graduate from medical school.

To what degree did the decision of the UC Regents to abolish affirmative action in UC admissions policies and the passage of Proposition 209 cause the reduction in URM participation in California medical schools? Some trends, such as the decline in the number of URM admissions to UC medical schools, began prior to the UC Regents' decision. This coincided with California's economic recession, which required the adoption of significant fee increases for the UC medical schools. Scholarship and loan forgiveness programs could not match the level of these increases or compete with the packages offered by better-endowed private university medical schools. As well, there have been drops in URM applicants, admissions and matriculants in states where no affirmative action policy changes have occurred.

However, evidence suggests that the UC Regents' decision and Proposition 209 may have contributed to the reduction in URM participation in medical education in California. Much of the decline in URM applicants, admissions, and matriculants to California schools either began after the UC Regents' decision and passage of Proposition 209, or accelerated after these policies were enacted. These reductions also occurred a few years before the overall reduction in URM enrollment in medical schools for the nation as a whole, and the magnitude of these reductions were much greater in California. In addition, reductions occurred earlier, and were greater, in UC schools than in private California medical schools, coincident with the earlier revocation of selective admissions in the UC system and the passage of Proposition 209, abolishing affirmative action in public institutions. Finally, the growing tendency of California URM residents to enroll in out of state medical schools suggests that URM students may be finding more opportunities for medical education in states other than California that have not rescinded affirmative action.

Many prior studies have documented that minority physicians play a critical role in providing care to underserved communities. Our analysis of recent medical student graduation questionnaires confirms that URM graduates--especially URM graduates of UC schools--are much more likely than other students to express an interest in practicing in underserved communities. Diversity in the medical profession is not only a matter of educational equity, but is a public health issue with profound ramifications for access to care for the state's most needy communities.

We offer the following policy recommendations:

1. The State Legislature should repeal Proposition 209 and the UC Regents' should restore selective admissions for URMs.

2. All medical schools and residency programs in California should have admissions policies that take into consideration the various factors that contribute to physicians' ability to serve the public effectively. Grades and test scores are not the only determinants of successful completion of medical education and effective performance as a physician. Medical school admissions policies must be sufficiently flexible and individualized to take full account of the variety of attributes and life experiences of applicants that may predict a successful career in medicine and future professional contribution to the health of the public. Educational institutions in California, particularly state institutions, must place a special emphasis on considering applicant characteristics that are likely to predict future service to underserved

populations in the state. This will require less reliance on quantitative test scores to limit the number of students selected for the interview round of the application process, and greater use of interviews and other qualitative evaluation methods in the selection process.

3. Irrespective of the future of educational affirmative action policies in California, the state legislature should collaborate with all levels of educational institutions in California to enhance educational opportunities and academic preparedness for minority students, especially in science and health-related curricula.

APPENDIX

California Underrepresented Minority Applicants, 1990-1998

Source: AAMC 1998

	1990	1991	1992	1993	1994	1995	1996	1997	1998
UCD	267	381	433	452	599	605	559	412	375
UCSF*	407	493	606	599	683	713	631	504	467
UCI	341	445	467	486	604	579	538	410	344
UCSD	394	494	536	533	637	639	570	462	359
UCLA**	453	552	612	583	718	707	657	527	485
Drew	456	579	622	653	804	762	680	549	515
Loma Linda	200	304	345	318	437	439	383	320	292
USC	319	417	464	485	615	609	601	511	438
Stanford	428	503	616	580	718	704	664	516	524
CA Private	635	786	906	891	1110	1119	1071	860	837
All UC	827	1010	1110	1176	1341	1358	1221	997	967
CA Total	970	1181	1325	1389	1591	1641	1487	1216	1223

California Underrepresented Minority Admissions, 1990-1998

Source: AAMC 1998

	1990	1991	1992	1993	1994	1995	1996	1997	1998
UCD	47	55	52	77	35	20	36	32	31
UCSF*	53	54	70	72	62	62	56	54	44
UCI	50	57	56	44	43	31	18	10	8
UCSD	45	60	66	56	64	47	39	8	26
UCLA**	52	58	55	60	58	52	45	45	45
Drew	36	28	48	44	35	39	35	41	42
Loma Linda	20	22	18	17	24	16	15	17	19
USC	63	68	80	109	92	82	72	54	46
Stanford	40	38	45	40	45	40	45	36	34
CA Private	114	118	135	156	157	123	127	99	91
All UC	162	178	195	200	179	164	139	130	136
CA Total	208	234	247	262	262	231	206	186	184

California Underrepresented Minority Matriculants, 1990-1998

Source: AAMC 1998

	1990	1991	1992	1993	1994	1995	1996	1997	1998
Non-CA	431	485	540	503	584	607	528	469	489
UCD	18	21	22	31	9	7	2	11	13
UCSF*	30	31	29	40	31	43	30	27	24
UCI	5	14	17	9	14	5	3	2	2
UCSD	18	18	21	12	22	13	12	2	10
UCLA**	16	18	28	23	32	29	28	31	26
Drew	18	17	21	19	21	21	18	18	14
Loma Linda	8	12	11	8	13	8	11	8	11
USC	23	21	20	39	26	29	27	10	14
Stanford	16	15	18	12	17	19	9	10	18
CA Private	47	48	49	59	56	56	47	28	43
All UC	105	119	138	134	129	118	93	91	89
CA Total	152	167	187	193	185	174	140	119	132
US Total	583	652	727	696	769	781	668	588	621

* Includes UCSF Berkeley Combined Program

**Does not Include Drew Numbers

Percent Change in California Underrepresented Minority Applicants, 1990-1998
Source: AAMC 1998

	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98
UCD	43%	14%	4%	33%	1%	-8%	-26%	-9%
UCSF*	21%	23%	-1%	14%	4%	-12%	-20%	-7%
UCI	30%	5%	4%	24%	-4%	-7%	-24%	-16%
UCSD	25%	9%	-1%	20%	0%	-11%	-19%	-22%
UCLA**	22%	11%	-5%	23%	-2%	-7%	-20%	-8%
Drew	27%	7%	5%	23%	-5%	-11%	-19%	-6%
Loma Linda	52%	13%	-8%	37%	0%	-13%	-16%	-9%
USC	31%	11%	5%	27%	-1%	-1%	-15%	-14%
Stanford	18%	22%	-6%	24%	-2%	-6%	-22%	2%
CA Private	24%	15%	-2%	25%	1%	-4%	-20%	-3%
All UC	22%	10%	6%	14%	1%	-10%	-18%	-3%
CA Total	22%	12%	5%	15%	3%	-9%	-18%	1%

Percent Change in California Underrepresented Minority Admissions 1990-1998
Source: AAMC 1998

	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98
UCD	17%	-5%	48%	-55%	-43%	80%	-11%	-3%
UCSF*	2%	30%	3%	-14%	0%	-10%	-4%	-19%
UCI	14%	-2%	-21%	-2%	-28%	-42%	-44%	-20%
UCSD	33%	10%	-15%	14%	-27%	-17%	-79%	225%
UCLA**	12%	-5%	9%	-3%	-10%	-13%	0%	0%
Drew	-22%	71%	-8%	-20%	11%	-10%	17%	2%
Loma Linda	10%	-18%	-6%	41%	-33%	-6%	13%	12%
USC	8%	18%	36%	-16%	-11%	-12%	-25%	-15%
Stanford	-5%	18%	-11%	13%	-11%	13%	-20%	-6%
CA Private	4%	14%	16%	1%	-22%	3%	-22%	-8%
All UC	10%	10%	3%	-11%	-8%	-15%	-6%	5%
CA Total	13%	6%	6%	0%	-12%	-11%	-10%	-1%

Percent Change in California Underrepresented Minority Matriculants, 1990-1998
Source: AAMC 1998

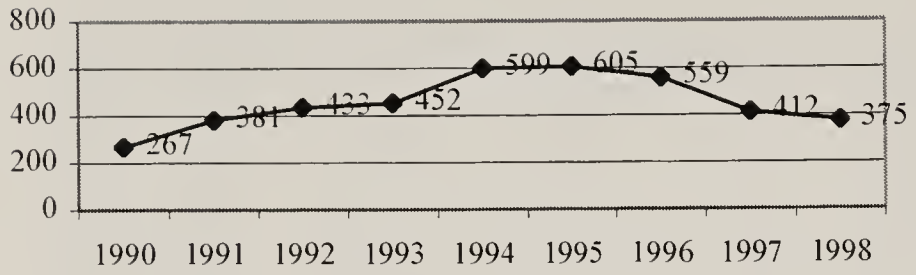
	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98
Non-CA	13%	11%	-7%	16%	4%	-13%	-11%	4%
UCD	17%	5%	41%	-71%	-22%	-71%	450%	18%
UCSF*	3%	-6%	38%	-23%	39%	-30%	-10%	-11%
UCI	180%	21%	-47%	56%	-64%	-40%	-33%	0%
UCSD	0%	17%	-43%	83%	-41%	-8%	-83%	400%
UCLA**	13%	56%	-18%	39%	-9%	-3%	11%	-16%
Drew	-6%	24%	-10%	11%	0%	-14%	0%	-22%
Loma Linda	50%	-8%	-27%	63%	-38%	38%	-27%	38%
USC	-9%	-5%	95%	-33%	12%	-7%	-63%	40%
Stanford	-6%	20%	-33%	42%	12%	-53%	11%	80%
CA Private	2%	2%	20%	-5%	0%	-16%	-40%	54%
All UC	13%	16%	-3%	-4%	-9%	-21%	-2%	-2%
CA Total	10%	12%	3%	-4%	-6%	-20%	-15%	11%
US Total	12%	12%	-4%	10%	2%	-14%	-12%	6%

* Includes UCSF Berkeley Combined Program

**Does not Include Drew Numbers

Number of URM Applicants to California Medical Schools

UCD



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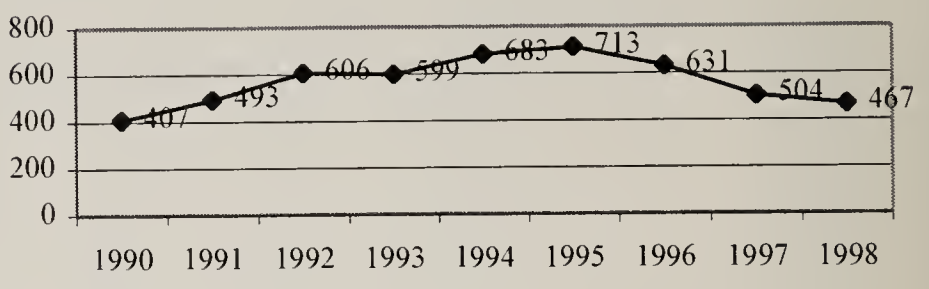

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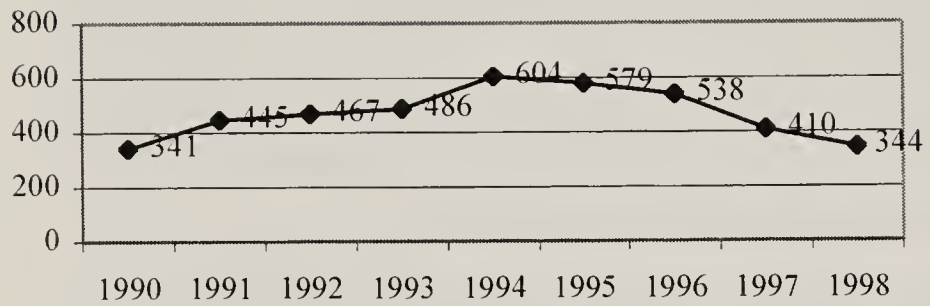

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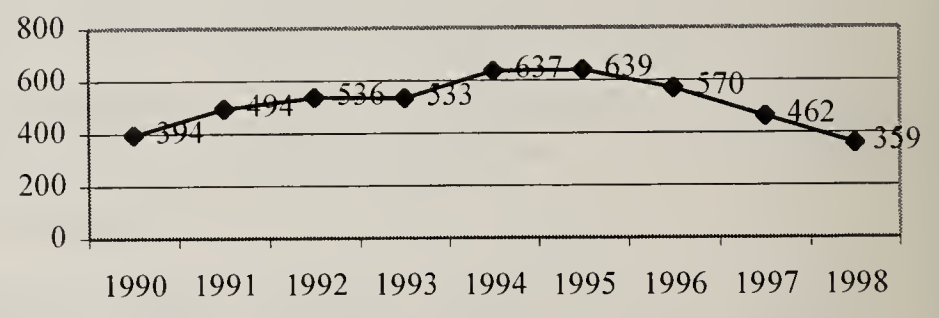

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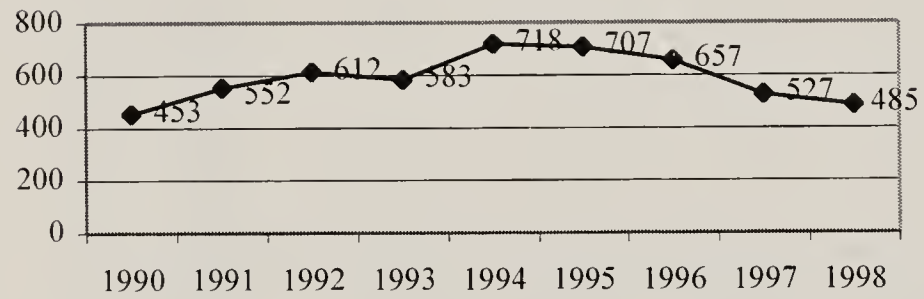
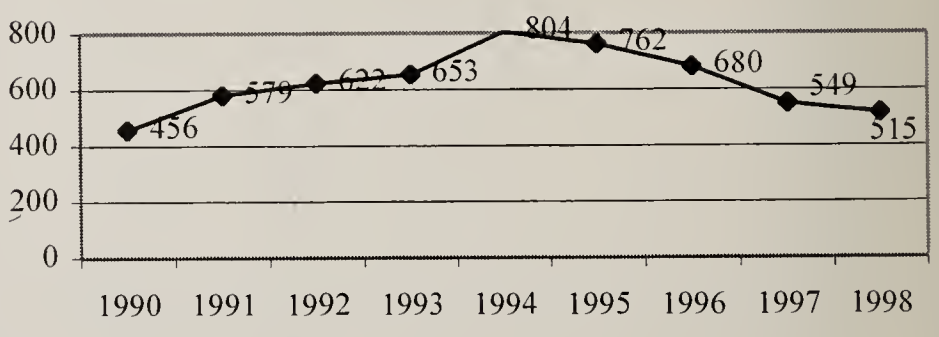


Drew



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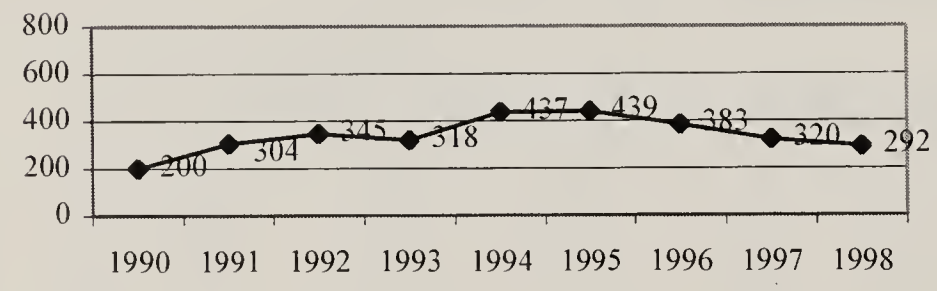

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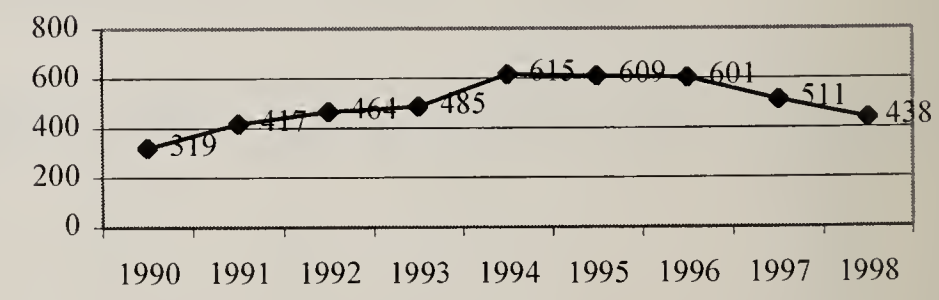

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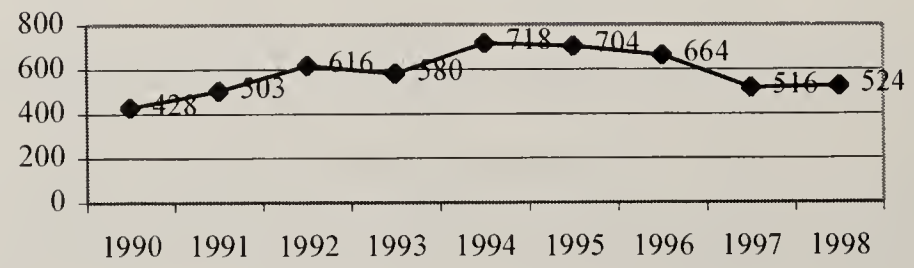


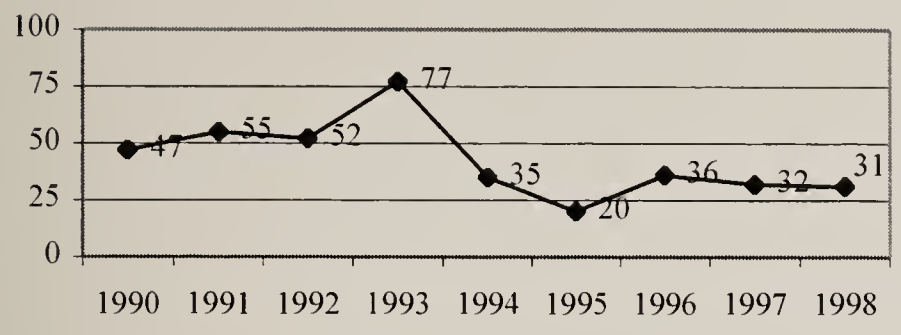
* Includes UCSF Berkeley Combined Program

**Does not Include Drew Numbers

Source: AAMC

Number of URM Admissions to California Medical Schools

UCD



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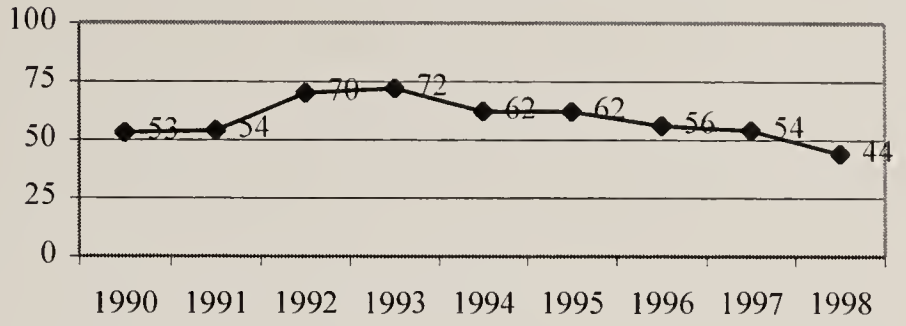

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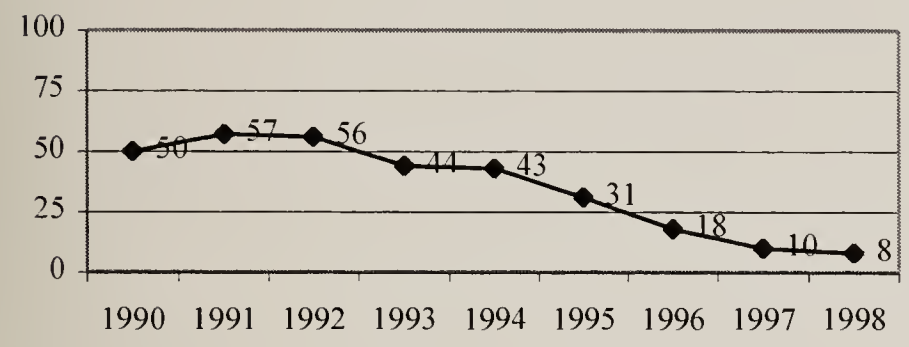

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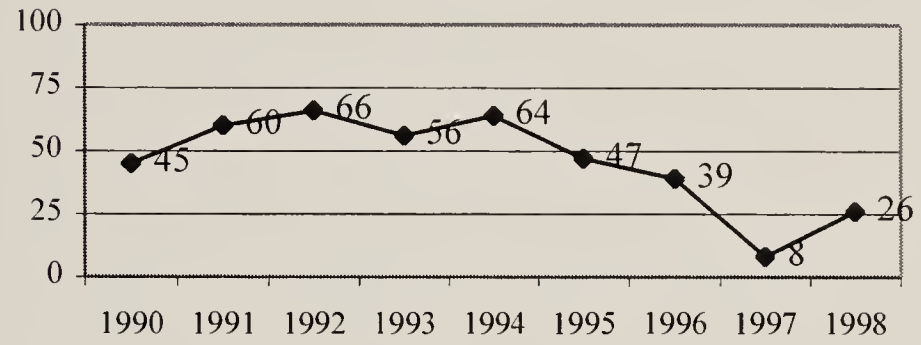

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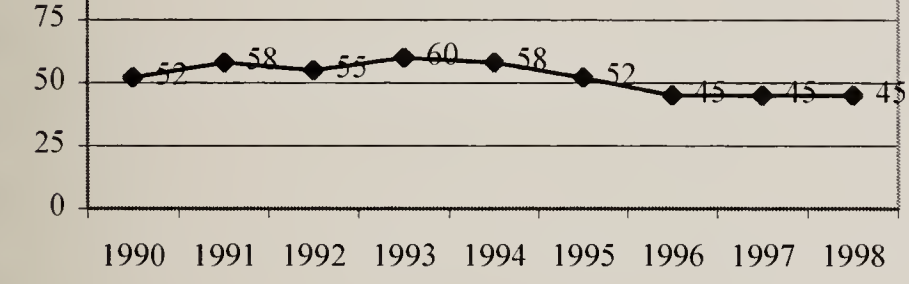
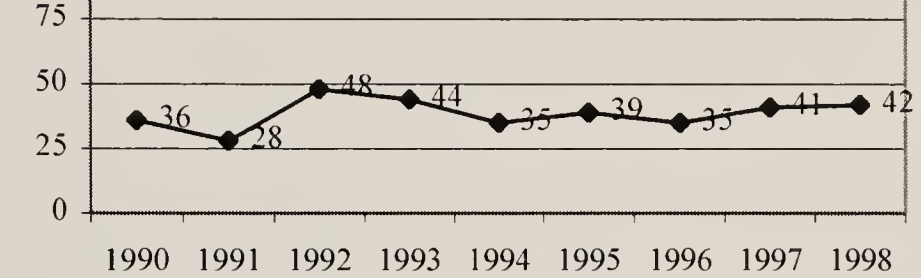
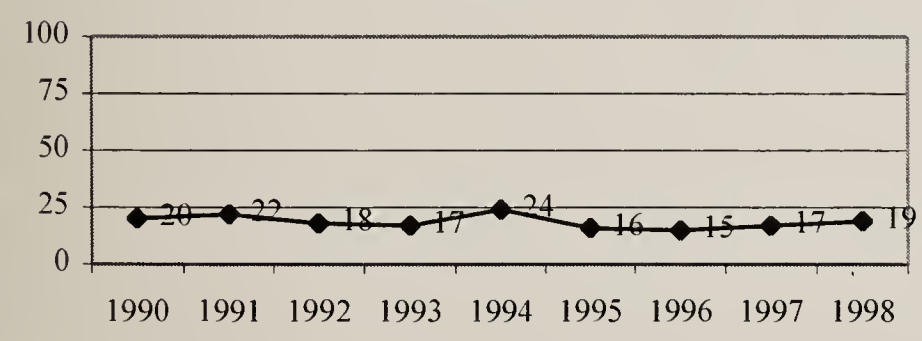


Drew



Loma Linda



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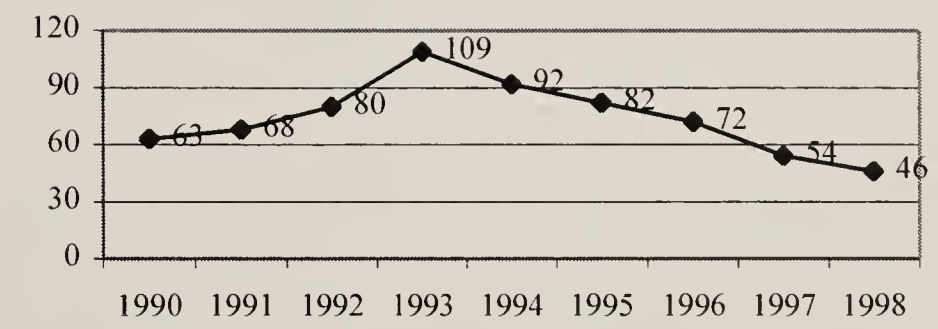

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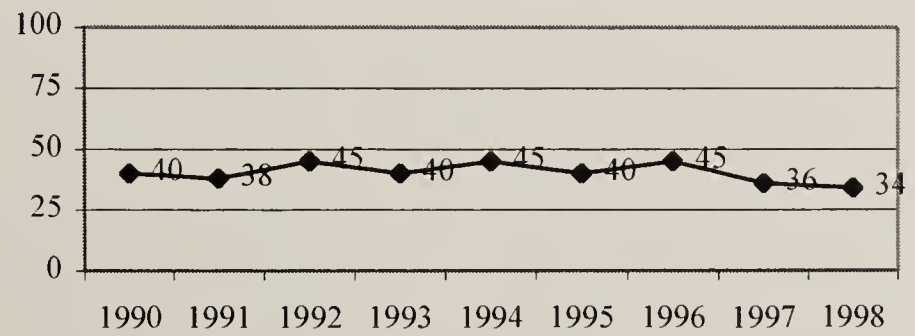

* Includes UCSF Berkeley Combined Program

**Does not Include Drew Numbers

Source: AAMC

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